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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/786,626	10/11/2001	Keiichi Tanaka	0234-0421P	3843

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EXAMINER

JOHNSON, EDWARD M

ART UNIT	PAPER NUMBER
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1754

DATE MAILED: 03/11/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/786,626

Applicant(s)

TANAKA ET AL.

Examiner

Edward M. Johnson

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 November 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3,5-8,12-16,18-22 and 26 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3,5-8,12-16,18-22 and 26 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 11/04.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

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DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this

Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1-2, 6-8, 12-16, 18-22, and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Murasawa 5,547,823 in view of Eckberg US 5,583,195.

Regarding claims 1, 15, and 19, Murasawa '823 discloses a photocatalyst composited with a polymer having an anionic group (see Example 1), which would inherently attract a positive charge, for waste purification (see column 1, lines 47-51), and 0.8 g of polymer in 23.6 g solution (see Example 1).

Regarding claims 7-8, Murasawa '823 discloses photocatalyst composited with a polymer having an anionic group (see Example 1), which would inherently attract a positive charge, for waste purification (see column 1, lines 47-51), 0.8 g of polymer in 23.6 g solution (see Example 1), mixing, coating, and drying (see Example 1).

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Regarding claims 1, 7-8, 15, and 19, Murasawa '823 fails to disclose a poly(fluorine-substituted sulfonic acid).

Eckberg '195 discloses coatings (see column 4, lines 43-48) of fluoro sulfonic acid polymer (see paragraph bridging columns 5-6).

It is considered that it would have use the fluoro sulfonic acid polymer of Eckberg to coat the photocatalyst of Murasawa because Eckberg discloses his polymers to coat photocatalysts in order to advantageously increase the quantum efficiency of photo-catalysts and overcome poor solubility (see column 3, lines 19-26) and because Murasawa discloses mixing specifically with "fluorinated polymers" (see column 3, lines 38-50).

Regarding claim 2, Murasawa '823 discloses linear polymers (see column 3, lines 52-55).

Regarding claim 6, Murasawa '823 discloses a substrate (see abstract).

Regarding claims 12-14, 18 Murasawa '823 discloses titanium oxide (see abstract).

Regarding claim 16, Murasawa '823 discloses sheets (see column 4, lines 59-64).

Regarding claims 20-22, Murasawa '823 discloses waste purification (see column 1, lines 47-51).

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Regarding claim 26, Murasawa '823 discloses 0.8 g of polymer in 23.6 g solution (see Example 1).

3. Claims 3 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Murasawa in view of Eckberg as applied to claims 1-2 above, and further in view of Heller et al. US 5,854,169.

Regarding claim 3, Murasawa fails to disclose a particle size of 0.04-1 micron.

Heller '169 discloses a particle diameter of 1-50 nm (see column 8, lines 39-41).

It is considered that it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the 1-50 nm particle size of Heller in the photocatalyst of Murasawa because Heller discloses the 1-50 nm particle size to make a useful self-cleaning paint composition and for adhering larger, light scattering particles to a surface (see column 8, lines 53-56).

Regarding claim 5, Heller '169 discloses a particle diameter, which would obviously, to one of ordinary skill, at least suggest a sphere rather than a form with a length, width, or height.

Response to Arguments

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4. Applicant's arguments filed 11/24/04 have been fully considered but they are not persuasive.

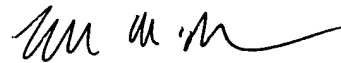
Applicant's arguments with respect to the claims have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Edward M. Johnson whose telephone number is 571-272-1352. The examiner can normally be reached on M-F 9:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stanley S. Silverman can be reached on 571-272-1358. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 571-272-0987.



Edward M. Johnson
Examiner
Art Unit 1754

EMJ